

That some damage will result from such general rains this early in the year is certain. A considerable part of the prune crop is in process of drying, and the rain where it has been heavy will entail loss of some of the fruit and a good deal of expense in saving the rest that was exposed to the showers. Moreover, the grape crop may be more or less hurt, but reports are to the effect that the injury to that crop is not expected to be great in any part of the State.

It is worth noting that from nearly all the centers of the fruit and grape industry it is announced that the warnings of the Weather Bureau of the coming of the showers were given in time to enable the orchardists and vineyardists to prepare for them. Prunes that had been spread for drying were stacked before the rains came, and the loss, therefore, was much smaller than it would have been otherwise. The usefulness of the Bureau has thus been again demonstrated, and when all rural workers learn to pay attention to its reports the profit from its labors will be even greater than now.

In any case, however, the losses from the showers would have been slight in comparison with the gains that will result from the early coming of the beginning of the rainy season. The drought has been long and severe; it was beginning to tell upon the vitality of the orchards in many sections, and fears were expressed whether the trees would be able to form buds for the fruit of next year. The showers have come in time, it is to be hoped, to put an end to all anxieties on that score, and to give every rural industry reason for the hope of an abundant harvest in 1899.

W. H. Hammon, *Forecast Official.*

FORECASTS TO MILITARY CAMPS.

During September, 1898, provision was made, by direction of the Secretary of Agriculture, to telegraph from the Central Office of the Weather Bureau at Washington, forecasts to commanding officers of the several Army corps whenever weather conditions injurious to the health or comfort of troops under canvass were expected in the States where the Army corps were located. An appreciation of these forecasts is indicated by the following press notes:

New York Evening Telegram, September 16, 1898.

CAMP WIKOFF, MONTAUK POINT, L. I., September 16, 1898.

A severe storm set in here last night and continued this morning. The camp authorities had been warned of its approach by the Weather Bureau and were prepared for it. Every tent had been strengthened, and the storm did no damage in camp, except to make it cold and cheerless.

New York Times, September 24, 1898:

CAMP WIKOFF, MONTAUK POINT, L. I.

A storm, brief but violent, swept over the camp last night and this morning, but did no serious damage. The storm warning from the Weather Bureau saved a worse experience, for everything was made snug last night.

AREAS OF HIGH AND LOW PRESSURES.

During the month the paths of seven high areas and of nine low areas have been traced on Charts I and II. It should be noted that these conditions are often extremely indefinite, and it is an open question whether it is possible to trace them with anything like the accuracy assumed in these charts. Often a disturbed condition will cover many thousands of square miles, and the position of the lowest pressure in this region from day to day does not indicate a motion in a low center, but rather an effect of the disturbance. Whenever the path is on the edge of the region of observation it will be understood that the position of the center of high or low is somewhat indefinite, also the pressure recorded at such low center is only that at the nearest point of observation and may differ widely from the pressure at that exact point. The accompanying table gives the principal facts regarding the place of origin and disappearance, the duration and velocity of these highs and lows, and the following remarks are added.

Highs.—Four of the highs developed off the Pacific coast, two to the north of Montana, and one in the middle Missouri

valley. No. III disappeared in Texas, but all the others could be traced to the Atlantic coast. The temperature changes accompanying the highs were very moderate, only three of them showing any marked fall. As No. I approached the middle Rocky Mountain region the afternoon of the 6th a fall in twenty-four hours of 32° occurred at Oklahoma, and the fall of 20° covered a region of 250,000 square miles. As high area No. II moved to south Dakota, afternoon of 9th, a fall of 30° occurred all over Kansas.

Lows.—There is a remarkable uniformity in the motion of the continental lows in that all but two started north of the fiftieth parallel and maintained their courses to the north of the region of observation till they reached the north Atlantic coast. No. I began in south Idaho and was last noted in the middle Mississippi valley. No. VII was first noted in the west Gulf, afternoon of 17th. This was of slight intensity, as it was held back by high pressures to the north and east; for this reason, also, its velocity, 15.2 miles an hour, was the slowest of the month. During the 9th, 10th, and 11th a storm center moved from the central part of the Gulf of Mexico northwestward to the Louisiana coast, attended by heavy rain and high northeast winds along the middle Gulf coast. During the 12th this storm passed rapidly northward and joined low area No. IV, over eastern Nebraska, by the morning of the 13th.

The highest winds of the month were as follows: 44 miles an hour at Milwaukee, a. m. of 6th, as No. III moved to the north of Lake Superior, and a wind of 40 miles at Pensacola, afternoon of 30th, caused by a disturbance in the Gulf. The heaviest rain of the month was 7.70 inches in twenty-four hours, at Pensacola, 29–30th of month; the heavy rains of the middle Gulf coast on those dates were caused by a storm which apparently remained nearly stationary over the west Gulf from the 27th to the close of the month.—H. A. Hazen, *Professor.*

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long. W.	Length.	Duration.	Daily.	Hourly.
High areas.										
I.....	1, p. m.	37	124	8, p. m.	40	72	4,080	7.0	583	24.3
II.....	7, p. m.	55	109	15, a. m.	46	59	3,390	7.5	452	18.8
III.....	14, a. m.	47	127	18, p. m.	34	101	1,770	4.5	393	16.4
IV.....	15, a. m.	45	100	17, p. m.	36	78	1,320	2.5	528	22.0
V.....	17, p. m.	49	125	21, p. m.	41	72	2,820	4.0	705	29.4
VI.....	21, a. m.	54	117	25, a. m.	47	60	3,320	4.0	880	34.6
VII.....	21, p. m.	36	123	29, a. m.	38	74	4,080	7.5	583	24.3
Total.....							20,780	37.0	4,074	169.8
Mean of 6 paths.....							2,969		582	24.3
Mean of 31.5 days.....									562	23.4
Low areas.										
I.....	31, p. m.*	42	114	3, p. m.	40	94	1,220	3.0	410	17.1
II.....	3, a. m.	51	101	5, p. m.	49	61	1,800	2.5	720	30.0
III.....	5, a. m.	51	98	8, a. m.	48	61	1,650	3.0	550	22.9
IV.....	11, p. m.	53	116	14, p. m.	48	87	1,920	3.0	640	26.7
V.....	13, p. m.	51	117	17, p. m.	48	52	2,880	4.0	720	30.0
VI.....	16, a. m.	54	107	19, p. m.	49	57	2,160	3.5	617	25.7
VII.....	17, p. m.	26	98	24, a. m.	41	69	2,370	6.5	365	15.2
VIII.....	25, p. m.	50	84	28, p. m.	47	59	1,440	3.0	490	20.0
IX.....	26, a. m.	54	111	28, p. m.	53	96	960	2.5	384	16.0
Total.....							16,410	31.0	4,886	203.6
Mean of 8 paths.....							1,823		543	22.6
Mean of 40 days.....									529	22.0

* August.

RIVERS AND FLOODS.

The light precipitation incidental to the season in the Missouri and middle and upper Mississippi valleys caused the

usual low water stages to prevail. Through navigation from St. Louis northward was suspended during the first week of September, 1898, and logging operations were greatly restricted. On the lower Mississippi a steady decline was noted, but with no serious interruption to navigation, except between St. Louis and Cairo, during the first ten days of the month.

In the Ohio River navigation by large packets and towing craft has been generally suspended, the smaller boats, only, remaining in commission for local traffic.

In the south Atlantic States heavy rains on the 22d and 23d caused a rapid rise in the rivers from southern Virginia southward into South Carolina. Much damage in the way of wash-outs, destruction of bridges, losses of crops, etc., resulted, and one death by drowning was reported.

Timely warning was given of the flood in the Savannah River on the first day of the month, and all stock and portable property were saved thereby. Of the crops, 90 per cent proved a total loss.

In the Tennessee River navigation proceeded uninterruptedly, the first instance of the kind since 1888, while in the Cumberland, it was practically suspended.

The highest and lowest water, mean stage, and monthly range at 118 river stations are given in the accompanying table. Hydrographs for typical points on seven principal rivers are shown on Chart V. The stations selected for charting are: Keokuk, St. Louis, Cairo, Memphis, and Vicksburg, on the Mississippi; Cincinnati, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.

For fuller details see Monthly Bulletin of the River and Flood Service for September, 1898.—H. C. Frankenfield, Forecast Official.

Heights of rivers referred to zeros of gauges, September, 1898.

Stations.	Distance to mouth of river.	Danger line on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Mississippi River.	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
St. Paul, Minn.	1,957	14	3.2	1.30	2.7	8-10	2.9	0.5
Reeds Landing, Minn.	1,887	12	1.0	3, 4, 7	0.3	28, 29	0.7	0.7
La Crosse, Wis.	1,822	12	1.8	1-7	1.3	15, 16, 27-29	1.5	0.5
North McGregor, Iowa.	1,782	18	1.3	2-4	0.6	30	1.1	0.7
Dubuque, Iowa.	1,702	15	1.2	1, 2, 5, 6	0.5	30	1.0	0.7
Leclaire, Iowa.	1,612	10	1.1	7	0.5	29, 30	0.7	0.6
Davenport, Iowa.	1,596	15	1.8	7	0.8	30	1.3	1.0
Galland, Iowa.	1,475	8	1.1	6-8	0.6	14-21, 26-30	0.8	0.5
Keokuk, Iowa.	1,466	14	2.4	6	0.0	30	0.7	2.4
Hannibal, Mo.	1,405	17	4.2	7	1.5	20, 21	2.3	2.7
Grafton, Ill.	1,307	23	5.5	9, 10	3.3	5	4.3	2.2
St. Louis, Mo.	1,264	30	11.0	19	4.6	6, 7	7.4	6.4
Chester, Ill.	1,199	30	7.1	20	2.6	7, 8	4.6	6.4
Cairo, Ill.	1,072	45	15.5	13	9.3	8	12.0	6.2
Memphis, Tenn.	848	33	9.3	15	5.8	10, 28, 29	7.5	3.5
Helena, Ark.	767	42	14.7	1	9.0	11, 30	11.7	5.5
Arkansas City, Ark.	635	42	18.6	1	9.5	12, 13	13.6	9.1
Greenville, Miss.	595	42	15.6	1	7.9	18	11.0	7.7
Vicksburg, Miss.	474	45	20.5	1	8.6	14	12.6	11.9
New Orleans, La.	108	16	6.7	1	3.9	16	5.2	2.8
Arkansas River.								
Wichita, Kans.	720	10	1.9	26	1.1	2-4, 8-10, 14-19	1.3	0.8
Fort Smith, Ark.	345	22	10.4	16	2.8	9, 10	5.6	7.6
Dardanelle, Ark.	250	21	10.5	17	2.6	12	5.9	7.9
Little Rock, Ark.	170	23	11.8	18	4.5	12	7.4	6.8
White River.								
Newport, Ark.	150	26	18.5	25	2.4	10, 12	6.5	11.1
Des Moines River.								
Des Moines, Iowa.	150	19	3.2	2-4	2.8	26	3.0	0.4
Illinois River.								
Peoria, Ill.	135	14	5.8	25, 26	4.4	4	5.3	1.4
Missouri River.								
Blismarck, N. Dak.	1,201	14	3.9	9-10	2.2	29, 30	2.9	1.7
Pierre, S. Dak.	1,006	14	3.9	14, 15	2.6	26-30	3.1	1.3
Sioux City, Iowa.	676	19	6.6	21	5.3	10, 11	5.7	1.3
Omaha, Nebr.	561	18	7.6	23, 24	6.9	18-20	7.2	0.7
St. Joseph, Mo.	373	10	3.5	6	1.8	22, 30	2.3	1.7
Kansas City, Mo.	280	21	9.5	9	7.0	4, 20, 24, 30	7.6	2.5
Boonville, Mo.	191	20	9.7	10	5.8	27	7.3	3.9
Hermann, Mo.	95	24	10.8	18	5.0	6	7.4	5.8

Heights of rivers above zeros of gauges—Continued.

Stations.	Distance to mouth of river.	Danger line on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Ohio River.	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Pittsburg, Pa.	968	22	6.5	10	5.0	30	5.8	1.5
Davis Island Dam, Pa.	960	25	3.9	1, 10	2.0	21	2.8	1.9
Wheeling, W. Va.	875	36	5.0	1	1.5	28, 29	2.7	3.5
Parkersburg, W. Va.	785	36	6.5	1	2.5	29, 30	4.1	4.0
Point Pleasant, W. Va.	703	39	5.7	1	1.7	23-24	3.5	4.0
Catlettsburg, Ky.	651	50	7.6	2	1.9	24	4.8	5.7
Portsmouth, Ohio.	612	50	8.5	2	2.9	24	6.0	5.6
Cincinnati, Ohio.	498	50	10.1	1	5.0	27	7.7	5.1
Louisville, Ky.	367	38	5.8	1	3.6	26	4.7	2.2
Evansville, Ind.	184	35	11.2	1	4.1	30	6.1	7.1
Paducah, Ky.	47	40	11.1	11	3.5	26, 27	6.5	7.6
Allegheny River.								
Warren, Pa.	177	7	1.0	1	0.0	25-30	0.4	1.0
Oil City, Pa.	123	13	2.0	1	0.5	22-25	0.9	1.5
Parkers Landing, Pa.	73	20	1.4	1	1.0	30	1.1	0.4
Freeport, Pa.	26	20	2.9	1	0.9	21-23	1.5	2.0
Conemaugh River.								
Johnstown, Pa.	64	7	2.2	1	1.1	22, 30	1.5	1.1
Red Bank Creek.								
Brookville, Pa.	35	8	0.5	1-13	0.2	16-30	0.3	0.3
Beaver River.								
Ellwood Junction, Pa.	10	14	-0.1	1	-1.0	29, 30	-0.7	0.9
Cumberland River.								
Burleson, Ky.	494	50	7.0	28	0.5	22	2.1	6.5
Carthage, Tenn.	287	30	3.8	10	1.0	21	1.8	2.8
Nashville, Tenn.	175	40	4.7	12	1.7	25	2.5	8.0
Great Kanawha River.								
Charleston, W. Va.	61	30	7.9	7	4.2	28	6.4	3.7
New River.								
Hinton, W. Va.	95	14	3.8	6	1.2	20-22	2.0	2.6
Licking River.								
Falmouth, Ky.	30	25	1.0	1, 2, 6-8	0.5	21-23	0.8	0.5
Miami River.								
Dayton, Ohio.	69	18	2.0	26	0.8	1, 2	1.3	1.2
Monongahela River.								
Weston, W. Va.	161	18	1.7	8	-1.2	3, 4	-0.5	2.9
Fairmont, W. Va.	119	25	2.0	8	-0.2	3, 4	0.4	2.2
Greensboro, Pa.	81	18	8.0	8, 9	6.3	22-26	6.7	1.7
Lock No. 4, Pa.	40	28	7.6	9	5.6	24, 25	6.1	2.0
Cheat River.								
Rowlesburg, W. Va.	36	14	2.8	8	0.8	18-23, 27-30	1.5	2.0
Youghiogheny River.								
Confluence, Pa.	59	10	1.9	8	0.6	23	1.2	1.3
West Newton, Pa.	15	23	0.8	7	0.0	22	0.4	0.8
Muskingum River.								
Zanesville, Ohio.	70	20	8.0	1	6.6	19, 21	7.1	1.4
Tennessee River.								
Knoxville, Tenn.	614	29	4
Kingsport, Tenn.	534	25	13.0	4	0.9	21, 22	3.4	12.1
Chattanooga, Tenn.	490	33	24.6	5	3.5	21, 22	7.6	21.5
Bridgeport, Ala.	390	24	18.2	6	1.8	22	5.3	16.4
Florence, Ala.	230	16	12.8	8	1.8	4, 24	4.5	11.0
Johnsonville, Tenn.	94	21	16.5	10	2.8	6	6.1	13.7
Clinch River.								
Spears Ferry, Va.	156	20	0.9	5	-0.5	21, 30	0.1	1.4
Clinton, Tenn.	46	25	7.0	3	2.8	21	4.1	4.2
Wabash River.								
Mount Carmel, Ill.	50	15	5.8	29	1.3	4, 5	2.3	4.5
Red River.								
Arthur City, Tex.	688	27	5.8	2	4.5	23-30	4.9	1.3
Fulton, Ark.	565	28	13.3	16	3.2	30	5.3	10.1
Shreveport, La.	449	29	7.3	19	1.8	10	3.3	5.5
Alexandria, La.	139	33	4.3	24	-0.3	20	1.2	4.6
Atchafalaya Bayou.								
Melville, La.	100*	31	21.3	1	9.5	18	14.0	11.8
Ouachita River.								
Camden, Ark.	840	39	5.2	19	3.2	12-14	4.1	2.0
Monroe, La.	100	40	4.2	30	0.8	13-15	1.7	3.4
Yazoo River.								
Yazoo City, Miss.	80	25	1.1	1	-0.3	17	0.3	1.4
Chattahoochee River.								
Columbus, Ga.	140	20	25.6	7	2.1	29, 30	6.5	23.5
Flint River.								
Albany, Ga.	80	20	17.2	2	0.8	30	7.3	16.4
Cape Fear River.								
Fayetteville, N. C.	100	38	18.8	6	2.2	22	7.5	16.6
Columbia River.								
Umatilla, Oreg.	270	25	8.3	1	4.2	27-30	5.8	4.1
The Dalles, Oreg.	166	40	12.3	1	5.8	24-26	8.0	6.5
Willamette River.								
Albany, Oreg.	99	20	1.5	27, 28	0.7	1-19	0.8	0.8
Portland, Oreg.	10	15	5.7	8	2.2	25	3.7	8.5
Edisto River.								
Edisto, S. C.	75	6	5.9	12, 13	2.7	28-30	4.6	3.2
James River.								
Lynchburg, Va.	257	18	3.0	23	-0.2	18, 21, 22	0.5	3.2
Richmond, Va.	110	12	1.6	25	-0.2	14-18, 23	0.1	1.8
Alabama River.								
Montgomery, Ala.	265	35	16.6	10	1.5	22-24	5.9	15.1
Selma, Ala.	212	35	18.0	11	1.6	23, 24	7.2	16.4
Coosa River.								
Rome, Ga.	225	30	24.3	4	2.0	1	6.9	22.8
Gadsden, Ala.	144	18	17.3	8	1.0	2, 30	6.1	16.3
Tombigbee River.								
Columbus, Miss.	285	33	0.8	23	-3.7	19, 20	-2.8	4.5
Demopolis, Ala.	155	35	3.7	25	-3.0	20, 21	-1.2	6.7
Black Warrior River.								
Tuscaloosa, Ala.	90	38	1.2	1	-0.9	21, 26, 27	-0.3	2.1
Pedee River.								
Cheraw, S. C.	145	27	27.5	26	0.5	22, 23	5.9	27.0

Heights of rivers referred to zeros of gauges—Continued.

Stations.	Distance to mouth of river.	Danger line on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
<i>Black River.</i>	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Kingstree, S. C.	60	12	9.9	7	3.4	30	7.0	6.5
<i>Lumber River.</i>								
Fairbluff, N. C.	10	6	5.2	3-7	1.2	28	3.9	4.0
<i>Lynch Creek.</i>								
Effingham, S. C.	35	12	13.4	7,8	4.1	20	8.6	9.3
<i>Potomac River.</i>								
Harpers Ferry, W. Va. ...	170	16	2.0	1,2,6,7	0.5	30	1.3	1.5
<i>Roanoke River.</i>								
Clarksville, Va.	155	12	10.4	25	0.0	19-22	1.6	10.4
<i>Sacramento River.</i>								
Red Bluff, Cal.	241	23	-0.6	16,26,27	-0.8	1-14	-0.8	0.2
Sacramento, Cal.	70	25	7.5	28-30	7.1	13-21	7.2	0.4
<i>Santee River.</i>								
St. Stephens, S. C.	50	12	8.7	3-7	4.2	25	7.8	8.5
<i>Congaree River.</i>								
Columbia, S. C.	37	15	10.2	25	0.4	21	2.1	9.8

Heights of rivers above zeros of gauges—Continued.

Stations.	Distance to mouth of river.	Danger line on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
<i>Watauga River.</i>	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Camden, S. C.	45	24	26.9	25	3.1	23	9.3	23.8
<i>Savannah River.</i>								
Augusta, Ga.	130	32	28.4	2,3	7.1	19	13.0	21.3
<i>Susquehanna River.</i>								
Wilkesbarre, Pa.	178	14	6.0	1	0.0	26-30	1.9	6.0
Harrisburg, Pa.	70	17	3.0	3	0.8	24-26 23,30	1.6	2.2
<i>Juniata River.</i>								
Huntingdon, Pa.	80	24	3.3	27	2.8	15-26,30	2.9	0.5
<i>W. Br. of Susquehanna.</i>								
Williamsport, Pa.	35	20	1.1	1	0.4	19,21 23-25	0.6	0.7
<i>Waccamaw River.</i>								
Conway, S. C.	40	7	4.9	3,4	3.0	28-30	4.2	1.9

*Distance to Gulf of Mexico.

THE WEATHER OF THE MONTH.

By A. J. HENRY, Chief of Division of Records and Meteorological Data.

The statistical aspects of the weather of the month are presented in the tables which form the closing part of this REVIEW. Table I, in particular, contains numerous details that are important in the study of climatology. The numerical values in the tables have been generalized in a number of cases, the results appearing on Charts Nos. III to VII, inclusive.

PRESSURE AND WIND.

Normal conditions.—The geographic distribution of normal barometric readings at sea level and under local gravity for September is shown by Chart V of the MONTHLY WEATHER REVIEW for September, 1893.

Normal pressure in September is highest (30.10) on the Virginia coast, whence it decreases westward to the Mississippi Valley (30.05), and the Plains region (30.00). It is also high (30.00) on the north Pacific coast. Normal pressure is lowest (29.90) in the lower Colorado and upper Saskatchewan valleys.

As compared with August there is generally an increase of pressure in all regions save the extreme north Pacific coast and over the southern part of the Florida Peninsula. The greatest increase, 0.5 inch and over, occurs from New England and the Middle Atlantic States westward to the Mississippi Valley and over the northern Rocky Mountain and Plateau regions. The pressure changes of September mark the beginning of the return of winter conditions, viz, a building up of the South Atlantic and Plateau highs and a general increase of pressure over all sections.

In September the winds of the South Atlantic coast States are northeasterly and easterly, and there is also a marked eastward tendency noticeable south of the thirty-seventh parallel and westward to the Plateau region. In Texas and elsewhere on the Plains southeasterly winds prevail as in the preceding month. The winds of New England are offshore as a rule. Southerly winds prevail in the middle and upper Mississippi Valley, becoming southwesterly in the Lake Region. The winds of the upper Missouri Valley are generally from a northerly or westerly quarter, those of the Plateau and Rocky Mountain regions are westerly, except in cases largely controlled by local conditions.

The current month.—The distribution of monthly mean pressure is shown on Chart IV. The configuration of the isobars corresponds closely with normal conditions except possibly in the Rocky Mountain region.

Pressure was below normal in almost all parts of the

country, the only notable exception being over the southern half of Virginia, the Carolinas, and the northeastern corner of Florida. The greatest departure from normal conditions (.05 to .10 inch) occurred over a strip of territory extending from Texas to the Saskatchewan Valley and eastward from the upper lakes to St. Johns, N. F.

The distinguishing features of the month, as regards atmospheric pressure, was the relatively large number of disturbances having their origin on the southern Slope, Texas, or the west Gulf.

The character of September weather in the Gulf and South Atlantic States, whether warm and dry or broken by periods of wet and relatively cool weather, is largely dependent upon the origin and movement of atmospheric disturbances. In September, 1895 and 1896, no storm was generated in the west Gulf, Texas, or the southern Slope; the weather was accordingly warm and dry. During the current month several disturbances appeared in the Gulf, one of which remained in approximately the same position for about seventy-two hours before beginning to move inland, giving, in the meantime, cloudy weather and abundant rains on the coast.

The heavy rainfall on the immediate Gulf coast, particularly the western portion of it, is largely due to disturbances of this class.

TEMPERATURE OF THE AIR.

Normal conditions.—The normal temperature of the air in the United States in September varies from about 82° at Key West, 78° at Jacksonville, 78° at New Orleans, 80° at Galveston, 67° at San Diego, to 56° at Eastport, 62° at Burlington, 62° at Buffalo, 63° at Detroit, 56° at Duluth, 53° at St. Vincent, 55° at Havre, 58° at Spokane, and 57° at Seattle, on Puget Sound. The warmest regions are the lower Rio Grande Valley and southwestern Arizona, including a portion of the desert region of California; the coolest, the mountainous portions of Montana and Idaho and the north Pacific coast. The seacoast is cooler than the interior on corresponding parallels.

In studying the distribution of monthly mean temperatures it will be found very helpful to consult the charts at the end of this REVIEW, especially No. VI, Surface Temperatures, Maximum, Minimum, and Mean. This chart gives a very good idea of the variations of temperature with latitude